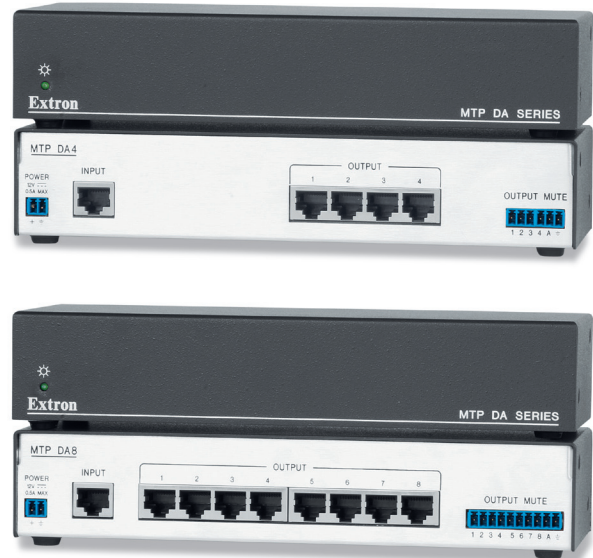


MTP DA4 and MTP DA8

Twisted Pair Distribution Amplifiers



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

Safety Instructions • English



This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français



Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).



Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions • Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Éviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch



Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.



Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits- und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español



Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.



Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaución

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean específicamente recomendados por el fabricante, ya que podrían implicar riesgos.

安全须知 • 中文



这个符号提示用户该设备用户手册中有重要的操作和维护说明。



这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation • Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'il y a un remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stromversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Lithium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearla ni eliminarla.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

警告

电源 • 该设备只能使用产品上标明的电源。设备必须使用有地线的供电系统供电。第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线，避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。不要有任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference; the user must correct the interference at his own expense.

NOTE: This unit was tested with shielded I/O cables on the peripheral devices. Shielded cables must be used to ensure compliance with FCC emissions limits.

For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the "[Extron Safety and Regulatory Compliance Guide](#)" on the Extron website.

Conventions Used in this Guide

Notifications

CAUTION: A caution indicates a situation that may result in minor injury.

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

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Trademarks

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Introduction

This section introduces the MTP DA4 and MTP DA8. Topics include:

- [About the MTP DA4 and MTP DA8](#)
- [TP Cable Advantages](#)
- [Termination and Mute Jumpering — MTP 15HD Systems Only](#)

About the MTP DA4 and MTP DA8

The Extron MTP DA4 and MTP DA8 twisted pair (TP) distribution amplifiers (DAs) distribute a single TP input signal to four or eight MTP receivers. The TP input can be from any of the following MTP transmitter and switcher families:

- **MTP T SV** — S-video transmitter (all models)
- **MTP T 15HD A** — RGB/high resolution video and audio transmitter (all models)
- **MTP T 15HD RS** — RGB/high resolution video and serial link transmitter (all models)
- **SW MTP T 15HD A** — Video and audio switcher with built-in TP transmitter
- **VTT001** — RGB/high resolution video transmitter

The MTP DAs are part of a system (see figure 1) used for long-distance distribution of VGA or other high resolution video. The MTP DAs can also distribute audio or a serial link over TP cable. The Extron Enhanced Skew-Free™ AV UTP cable is preferred, but Category (CAT) 5 shielded twisted pair (STP), unshielded twisted pair (UTP), and foil shielded twisted pair (FTP) cable are also acceptable.

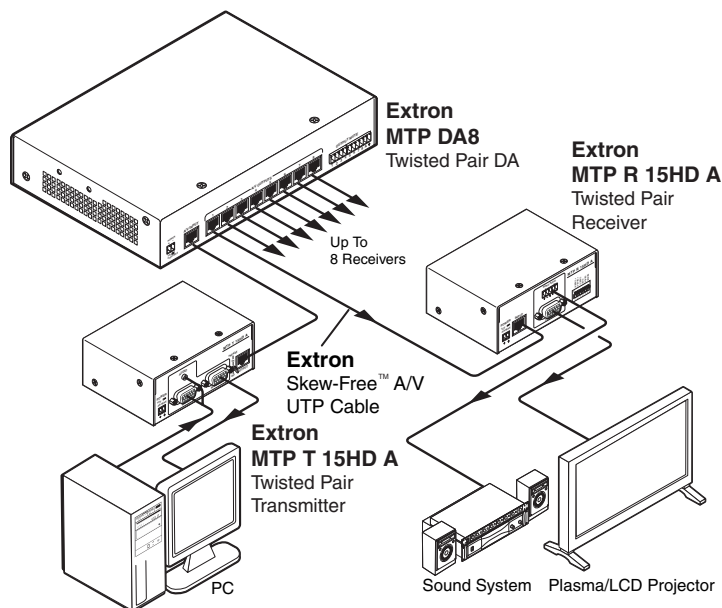


Figure 1. Typical TP Distribution System

The MTP DA inputs a proprietary signal on an RJ-45 connector, buffers it, and distributes four or eight identical proprietary signals on RJ-45 connectors.

NOTE: The MTP DA **does not** support the remote power feature of the MTP SV and VTT001. You will have to power the transmitter and all connected receivers.

A contact closure connector on the rear panel provides the ability to mute individual outputs or all outputs.

The MTPs ship with external desktop 12 V power supplies that accept 100 to 240 VAC, 50-60 Hz input.

TP Cable Advantages

Twisted pair cable is smaller, lighter, more flexible, and less expensive than coaxial cable. Termination of the cable with RJ-45 connectors is simple, quick, and economical.

Transmission Distance

The maximum distance **for the entire transmission system** is determined by the output frequency, resolution, and the position of the transmitter Pre-Peak switch (if equipped). The total recommended distances are not affected by the presence or absence of an MTP DA in the transmission system. The following sections specify the recommended transmission distances using Extron Enhanced Skew-Free AV UTP cable or UTP CAT 5 cable, terminated with CAT 5 rated connectors

- NOTES:**
- It is possible to exceed the recommended distance, however, image quality may be reduced.
 - The recommendations apply to a complete transmission system, which can include a single transmitter, one or more DAs, and one or more daisy-chained receivers. For example, the maximum suggested range for 1024 x 768 video is 300 feet with Pre-Peak off in an MTP 15HD system.
 - If you are using the DA as part of an MTP 15HD RS (serial data) transmission system, be aware that the DA routes the serial link one way only (from the transmitter to the receivers).
 - Also, the transmitter and receiver must be jumper configured to pass the serial link one way only (see the *MTP 15HD RS Series User Guide*).

The following table specifies the recommended transmission distances and transmitter Pre-Peak switch positions for MTP 15HD RGB transmission systems.

Recommended pre-peak switch position and transmission distances at 60 Hz

Video Format	Pre-Peak Off	Pre-Peak On	Max. Distance (High Quality)	Max. Distance (Variable Quality)
Composite, S-video, Component			800 feet (245 m)	1,000 feet (300 m)
640 x 480	<300 feet (90 m)	>350 feet (105 m)	700 feet (215 m)	750 feet (230 m)
800 x 600	<300 feet (90 m)	>350 feet (105 m)	550 feet (165 m)	650 feet (200 m)
1024 x 768*	<300 feet (90 m)	>350 feet (105 m)	500 feet (150 m)	600 feet (185 m)
1280 x 960*	<300 feet (90 m)	>350 feet (105 m)	400 feet (120 m)	500 feet (150 m)

Video Format	Pre-Peak Off	Pre-Peak On	Max. Distance (High Quality)	Max. Distance (Variable Quality)
1280 x 1024*	<250 feet (75 m)	>300 feet (90 m)	350 feet (105 m)	450 feet (135 m)
1360 x 765	<250 feet (75 m)	>300 feet (90 m)	400 feet (120 m)	500 feet (150 m)
1365 x 768	<250 feet (75 m)	>300 feet (90 m)	400 feet (120 m)	450 feet (135 m)
1366 x 768	<250 feet (75 m)	>300 feet (90 m)	400 feet (120 m)	450 feet (135 m)
1400 x 1050	<250 feet (75 m)	>300 feet (90 m)	350 feet (105 m)	400 feet (120 m)
1440 x 900	<250 feet (75 m)	>300 feet (90 m)	350 feet (105 m)	400 feet (120 m)
1600 x 1200*	<250 feet (75 m)	>300 feet (90 m)	300 feet (90 m)	450 feet (135 m)
1920 x 1200	<250 feet (75 m)	>300 feet (90 m)	300 feet (90 m)	400 feet (120 m)
2048 x 1080	<250 feet (75 m)	>300 feet (90 m)	300 feet (90 m)	400 feet (120 m)
HDTV 720p	<250 feet (75 m)	>300 feet (90 m)	400 feet (120 m)	500 feet (150 m)
HDTV 1080i	<250 feet (75 m)	>300 feet (90 m)	300 feet (90 m)	400 feet (120 m)
HDTV 1080p	<250 feet (75 m)	>300 feet (90 m)	300 feet (90 m)	400 feet (120 m)

NOTE: Resolutions marked with an asterisk (*) in the above table have the same range specification at 75 Hz.

MTP SV and MTP CV transmission distances

Extron suggests a minimum transmission distance of at least 50 feet (15 m). The maximum transmission distance is 1000 feet (300 m).

VTT001/VTR001 transmission distances

The following table specifies the maximum recommended transmission distances for a VTT001/VTR001 system at 60 Hz.

Video Format	Recommended Maximum Range	Video Format	Recommended Maximum Range
640 x 480	500 feet	1365 x 768	200 feet
800 x 600	400 feet	1366 x 768	200 feet
1024 x 768*	300 feet	1440 x 900	200 feet
1280 x 960*	200 feet	1400 x 1050	200 feet
1280 x 1024*	200 feet	1600 x 1200*	150 feet
1360 x 765	200 feet	1920 x 1080	150 feet

NOTE: Resolutions marked with an asterisk (*) in the above table have the same range specification at 75 Hz.

Termination and Mute Jumpering — MTP 15HD Systems Only

NOTE: The position of jumpers J3 and J9 have no effect when the DA is installed as a part of an MTP SV series or VTT001/VTR001 system.

When an MTP T 15HD A or SW MTP T 15HD A provides the input, the MTP DA output can include analog audio as well as RGB video. When an MTP T 15HD RS provides the input, the DA output can include a serial (RS-232) link as well as RGB video.

A jumper block inside the MTP DA sets the DA to properly terminate the audio or serial portion of the input signal when the input signal is transmitted by an MTP 15HD A series (audio), SW MTP T (audio), or MTP 15HD RS series (serial) transmitter.

A second jumper block sets the DA to mute the audio or serial link when its video mute function is activated. The DA can also be set to always pass the audio or serial link regardless of the contact closure mute status.

By default, the MTP DA is configured with the internal jumpers set to terminate audio (default). For serial data applications, the DA can be configured to properly terminate the signal as follows:

1. If applicable, disconnect all cables, remove the DA from its installation location, and remove any mounting brackets installed (see **Mounting** on page 14).
2. Remove the two screws from both sides of the DA and the two screws on the top (six screws total) and lift the top cover off of the DA (see figure 2).
3. **Select audio or serial distribution** — Locate jumper J3 on the main board and shift the jumper from the audio (default, on the right) to the serial (left) position (see figure 2).

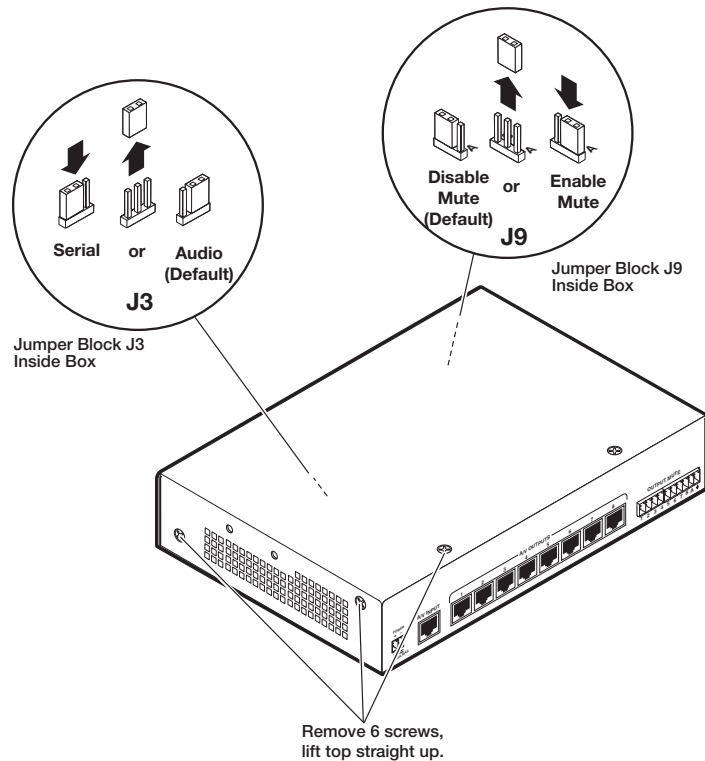


Figure 2. Opening the DA and Termination Jumpering

- 4. Enable or disable audio or serial distribution mute** — If desired, locate jumper J9 on the main board and shift the jumper from the disable mute (default, on the top) to the enable mute (bottom) position (see [figure 2](#)).

NOTES:

- When J9 is set to the disable mute (default, on the top) position, the video mute has no effect on the audio or serial distribution of the DA.
- When J9 is set to the enable mute (bottom) position, the DA mutes the audio or serial output when its contact closure video mute is activated.

- 5.** Replace the top cover.
- 6.** Reinstall the six screws removed in [step 2](#). If any mounting brackets were removed in [step 1](#), put them back into position as you reinstall the screws.
- 7.** If applicable, reinstall the DA and reconnect all cables.

Installation and Operation

This section provides information pertaining to the installation and operation of the MTP DA4 and MTP DA8, including:

- [Connections](#)
- [Power Supply Wiring](#)
- [TP Cable Termination](#)
- [Front Panel Power Indicator](#)
- [Skew Delay Problems](#)

Connections

ATTENTION: Do not connect these devices to a computer data or telecommunications network.

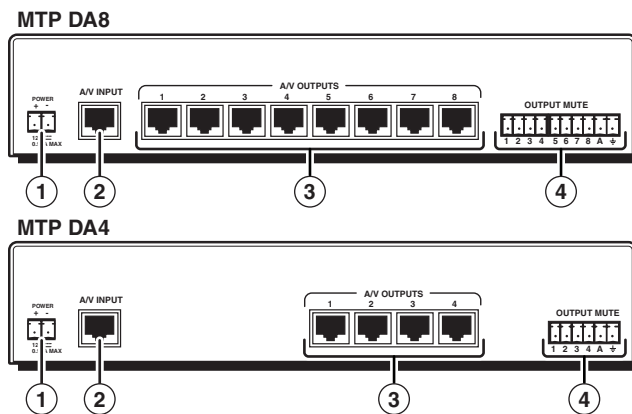


Figure 3. MTP DA Rear Panel Features

- ① **Power connector** — Plug the included external 12 VDC power supply into this 2-pole captive screw connector (see [Power Supply Wiring](#) on page 7 to wire the connector).
- ② **AV Input connector** — Connect one end of the cable carrying the video or audio/ serial TP link from the transmitting device to this RJ-45 female connector (see [TP Cable Termination](#) on page 8 to wire the RJ-45 connectors).
- ③ **AV Output connector** — Connect one end of up to four or eight TP cables to these RJ-45 female connectors.

Connect the free ends of the same cables carrying the distributed video or audio/serial TP link to the RJ-45 connectors on the receivers (see [TP Cable Termination](#) on page 8 to wire the RJ-45 connectors).

- NOTES:**
- The MTP DA output does not provide any pre-peaking control. The total recommended distance for a complex system with multiple DA outputs is the same as for a simple system with a single transmitter and receiver.
 - See the recommended transmission ranges in the table on page 2. The recommendations in the table apply to a complete transmission system, which can include a single transmitter, DA, and multiple receivers or a complex system including multiple daisy-chained receivers.

④ **Output Mute connections** — The Output Mute connector provides a way to mute (blank) any or all TP outputs. Each numbered pin of the captive screw connector is assigned to one of the DA outputs. Pin A is assigned to all DA outputs (see figure 4). When you short and latch a numbered pin or pins to ground, the DA mutes the associated outputs.

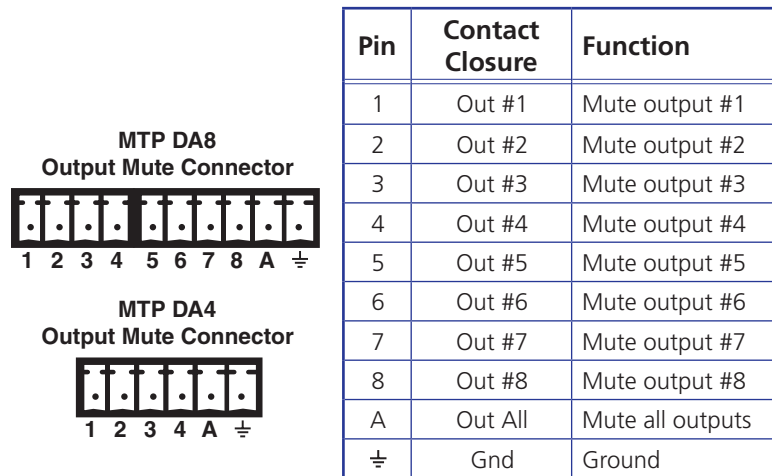


Figure 4. Mute Connector and Pinout

Power Supply Wiring

Figure 5 shows how to wire the power connector (see the caution, attention, and notes on the next page before wiring the power connector).

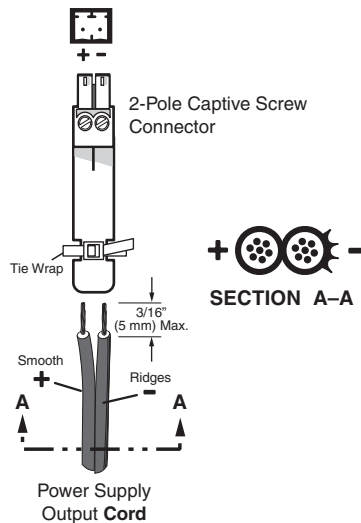


Figure 5. Power Connector Wiring

ATTENTION: Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord (see [figure 5](#)) identify the power cord negative lead.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

CAUTION: **May cause electric shock.** The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.

NOTES:

- The length of the exposed (stripped) copper wires is important. The ideal length is 3/16 inch (5 mm). Longer bare wires can short together. Shorter wires are not as secure in the connectors and could be pulled out.
- Do not tin the power supply leads before installing them in the direct insertion connector. Tinned wires are not as secure in the connectors and could be pulled out.

Use the supplied tie wrap to strap the power cord to the extended tail of the connector. Alternatively, an optional Extron PS 124 Universal 12 VDC Power Supply (part number **60-1022-01**) can power multiple Extron 12 VDC devices using only one AC power connector.

TP Cable Termination

NOTE: RJ-45 termination with CAT 5, CAT 5e, or CAT 6 cable must comply with the TIA/EIA T 568A or TIA/EIA T 568B wiring standards for all connections. RJ-45 termination with Skew-Free AV UTP cable must comply with TIA/EIA T 568 A only.

[Figure 6](#) on the next page details the termination of TP cables with RJ-45 connectors in accordance with the TIA/EIA T 568A or TIA/EIA T 568B wiring standards. Use either standard with CAT 5/5e/6 cable, but use the **same** standard on both ends of the cable.

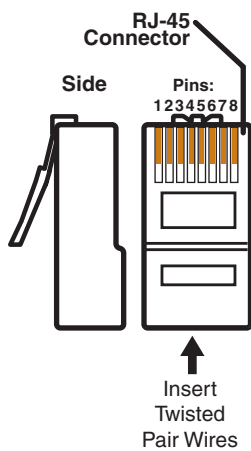
Note the separate columns for input from a low resolution (composite video or S-video) and high resolution (RGB video) MTP. Note also the power table that identifies the unconventional signal assignment when a low resolution MTP unit is jumpered for stereo audio.

NOTES:

- Enhanced Skew-free AV cable is **not recommended** for Ethernet/LAN applications.
- This cable is specially designed for compatibility with Extron Twisted Pair products, wired using the TIA/EIA 568 A standard.
- The green, brown, and blue pairs of this cable have virtually identical lengths and should be used to transmit RGB, composite video, or S-video signals.
- The orange pair of this cable has a different length and **should not** be used to transmit RGB, composite video, or S-video signals.
- If you are using the DA as part of an MTP 15HD RS (serial data) transmission system, be aware that the DA routes the serial link one way only, from the transmitter to the receivers.

Also, the transmitter and receiver must be jumper configured to pass the serial link one way only (see the *MTP 15HD RS Series User Guide*).

NOTE: When the TP input is from a low resolution unit (MTP SV or MTP AV), the signal assignment depends on the position of signal jumpers in the transmitter and receiver (see the *MTP AV Series User Guide*).



Jumpers in Mono Position (Default)

Pin	568 A Wire Color	568 B Wire Color	Composite Video MTP Signal	S-video MTP Signal	RGB Video, MTP, VTT/VTR Signal
1	White-green	White-orange	Reserved	Chroma (C) +	Red/ V.Sync +
2	Green	Orange	Reserved	Chroma (C) –	Red/ V.Sync –
3	White-orange	White-green	Mono audio +	Mono audio +	Mono audio + or RS-232 + (MTP 15HD only)
4	Blue	Blue	Video +	Luma (Y) +	
5	White-blue	White-blue	Video –	Luma (Y) –	Green –
6	Orange	Green	Mono audio -	Mono audio –	Mono audio – or RS-232 – (MTP 15HD only)
7	White-brown	White-brown	Reserved	Reserved	Blue/ H.Sync +
8	Brown	Brown	Reserved	Reserved	Blue/ H.Sync –

Jumpers in Stereo Position

Pin	568 A Wire Color	568 B Wire Color	Composite Video MTP Signal	S-video MTP Signal
1	White-green	White-orange	Video +	Luma (Y) +
2	Green	Orange	Video –	Luma (Y) –
3	White-orange	White-green	Reserved	Reserved
4	Blue	Blue	Audio left +	Chroma (C) & audio left +
5	White-blue	White-blue	Audio left –	Chroma (C) & audio left –
6	Orange	Green	Reserved	Reserved
7	White-brown	White-brown	Audio right +	Audio right +
8	Brown	Brown	Audio right –	Audio right –

NOTE: If you are using Enhanced Skew-Free™ AV cable, use the TIA/EIA T 568A standard only.

Figure 6. TP Cable Termination

Front Panel Power Indicator

The **Power LED** indicates power is applied to the MTP DA (see figure 7).

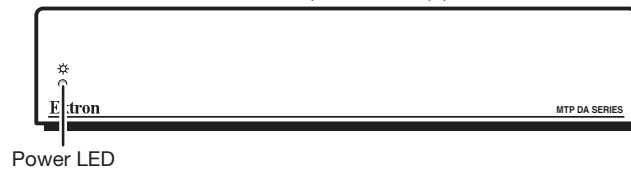


Figure 7. MTP DA Front Panels

Skew Delay Problems

CAT 5 TP cable can lead to registration errors between the red, green, and blue video signals. Pair skew can be measured with test equipment or identified by viewing a crosshatch test pattern with a critical eye to determine if either the red, green, or blue video image leads (appears to the left of) the other two video images. These images can be minimized or eliminated by using one of the following methods:

- Using a skew delay adjusting receiver:
(MTP RL 15HD A SEQ or MTP RL 15HD RS SEQ)
- Switching to an Extron Enhanced Skew-Free AV UTP cable
- Adding a skew compensation cable equal to the length of pair skew to the video output of the receiver
- Installing an SEQ 100 15HD Skew Equalizer on the video output of the receiver and adjusting the skew for the leading video image

Reference Information

This section provides reference information, including:

- **Specifications**
- **Part Numbers**
- **Mounting**

Specifications

Video

Gain..... Unity

Video input — see transmitters specifications

Number/signal type 1 set of proprietary analog signals
Connectors 1 female RJ-45

Video output — see receivers specifications

Number/signal type
MTP DA4 4 sets of proprietary analog signals
MTP DA8 8 sets of proprietary analog signals
Connectors
MTP DA4 4 female RJ-45
MTP DA8 8 female RJ-45
Maximum resolution 2048x1080

NOTE: See the [table](#) on page 2 for the maximum distances recommended for specific resolutions.

Audio

Gain..... Unity (0 dB)

Audio input — see transmitters specifications

Number/signal type 1 set of proprietary analog signals
Connectors 1 female RJ-45

Audio output — see receivers specifications

Number/signal type
MTP DA4 4 sets of proprietary analog signals
MTP DA8 8 sets of proprietary analog signals
Connectors
MTP DA4 4 female RJ-45
MTP DA8 8 female RJ-45

Control/remote — distribution amplifier

Contact closure (latching)

MTP DA4.....	(1) 3.5 mm captive screw connector, 6 pole for contact closure output mute control
MTP DA8.....	(1) 3.5 mm captive screw connector, 10 pole for contact closure output mute control

Contact closure pin configurations

MTP DA4.....	1 = mute output 1, 2 = mute output 2, 3 = mute output 3, 4 = mute output 4, 5 = mute all outputs, 6 = GND
MTP DA8.....	1 = mute output 1, 2 = mute output 2, 3 = mute output 3, 4 = mute output 4, 5 = mute output 5, 6 = mute output 6, 7 = mute output 7, 8 = mute output 8, 9 = mute all outputs, 10 = GND

General

Recommended cable type	Enhanced Skew-Free™ AV UTP Cable or CAT 5/5e/6 (shielded or unshielded)
Power supply.....	External Input: 100-240 VAC, 50-60 Hz
MTP DA4.....	12 VDC, 1 A, regulated
MTP DA8.....	12 VDC, 1 A, regulated
Power input requirements	
MTP DA4.....	12 V, 0.6 A
MTP DA8.....	12 V, 0.9 A
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling.....	Convection, no vents
Mounting	
Rack mount.....	Yes, with optional 1U rack shelf
Furniture mount	Yes, with optional under-desk mounting kit
Pole mount.....	Yes, with optional pole mounting kit
Enclosure type.....	Metal
Enclosure dimensions	1.75" H x 8.75" W x 6" D (1U high, half rack wide) (4.4 cm H x 22.2 cm W x 15.2 cm D) (Depth excludes connectors.)
Product weight.....	1.2 lbs (0.5 kg)
Shipping weight.....	4 lbs (2 kg)
Vibration.....	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Environmental.....	Complies with the appropriate requirements of RoHS, WEEE
MTBF	30,000 hours
Warranty.....	3 years parts and labor

NOTE: All nominal levels are at $\pm 10\%$.

NOTE: Specifications are subject to change without notice.

Part Numbers

MTP DA Distribution Amplifier

DA	Part Number
MTP DA4	60-685-01
MTP DA8	60-686-01

Included Parts

These items are included in each order for MTP DA4 and MTP DA8:

Included Parts	Part Number
12 VDC power supply MTP DA4 MTP DA8	28-071-57LF
MTP DA Series Setup Guide	
IEC power cord	
Rubber feet	
Tweezer	

Accessories

Accessory	Part Number
PS 124 multi output 12 V power supply	60-1022-01
RSU 129 1U universal rack shelf	60-190-01
RSB 129 1U basic rack shelf	60-604-02
RSU 126 6" deep universal rack shelf kit	60-190-10
RSB 126 6" deep basic rack shelf	60-604-11
MBU 125 low-profile mount kit	70-077-01
PMK 200 pole mount kit	70-077-04
SEQ 100 15HD skew equalizer	60-676-01

Cables

NOTE: Enhanced Skew-Free™ AV UTP cables are not recommended for Ethernet/LAN applications.

Enhanced Skew-Free AV Cable	Part Number
Enhanced Skew-Free AV cable (cut, various lengths)	26-569-xx
Enhanced Skew-Free AV 1000 feet (Bulk) (non-plenum)	22-141-03
Plenum enhanced Skew-Free AV 1000 feet (Bulk)	22-142-03

Connectors

Connector	Part Number
CAT 6 jack (black), qty. 10	100-476-01
CAT 6 jack (red), qty. 10	100-477-01
CAT 6 jack (blue), qty. 10	100-478-01
CAT 6 jack (orange), qty. 10	100-479-01
CAT 6 jack (gray), qty. 10	100-480-01
CAT 6 jack (white), qty. 10	100-481-01
CAT 6 jack (ivory), qty. 10	100-482-01

Mounting

CAUTION: Installation and service must be performed by authorized personnel only.

The 1U high, half rack width MTP DA can be set on a table, mounted on a rack shelf, mounted to a rack without a shelf, or mounted under a desk or tabletop.

NOTE: For rack or furniture mount installation, see the installation card that comes in the kit.

UL Guidelines

The following Underwriters Laboratories (UL) requirements pertain to the installation of the DA into or onto a rack.

- 1. Elevated operating ambient** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the +122 °F (+50 °C) maximum ambient temperature (TMA) specified by Extron.
- 2. Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- 3. Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- 4. Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- 5. Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections (such as the use of power strips) other than direct connections to the branch circuit.

Tabletop Use

Four self-adhesive rubber feet are included with the DA. For tabletop use, attach one foot to each corner of the bottom side of the unit and place the unit in the desired location.

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:

Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe, Africa, and the Middle East:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:

Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:

Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876
Asia: 65.6383.4400

Europe: 31.33.453.4040
Japan: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron Headquarters +1.800.633.9876 (Inside USA/Canada Only) Extron USA - West +1.714.491.1500 +1.714.491.1517 FAX	Extron USA - East +1.919.850.1000 +1.919.850.1001 FAX	Extron Europe +800.3987.6673 (Inside Europe Only) +31.33.453.4040 +31.33.453.4050 FAX	Extron Asia +800.7339.8766 (Inside Asia Only) +65.6383.4400 +65.6383.4664 FAX	Extron Japan +81.3.3511.7655 +81.3.3511.7656 FAX	Extron China +4000.398766 Inside China Only +86.21.3760.1568 +86.21.3760.1566 FAX	Extron Middle East +971.4.2991800 +971.4.2991880 FAX	Extron Korea +82.2.3444.1571 +82.2.3444.1575 FAX	Extron India 1800.3070.3777 Inside India Only +91.80.3055.3777 +91.80.3055.3737 FAX
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